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BUREAU OF
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# WEEKLY STATION REPORTS

OF THE DIVISION OF

## DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

AUG 1 1936

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REPORT FOR THE WEEK ENDING AUGUST 1, 1936.

HAVRE:

Precipitation during the month of July totaled only 0.19 inch. The mean maximum temperature was 96.0°, exceeding by 5.8° the previous record made in 1886. There were only four days when maximum readings were lower than 90.0°. The mean temperature was 11° above normal.

Continued dry weather has created a very serious fire hazard in nearby mountain districts. Uncontrolled blazes in the Little Rockies, 75 miles distant, have destroyed much timber and grass, taken three human lives, and resulted in the loss of considerable livestock. The Station lease in the Bear Paw range was not involved, although recently several small fires have been extinguished in the vicinity. The potential danger is exceedingly great at the present time.

A light second cutting of alfalfa hay is in the stack, and considerable slough grass for miscellaneous feed and bedding was mowed in an old glacial lake bed on station property. The second cultivation of fallow on the general farm is now in progress.

Station visitors included several representatives of the Soil Conservation Service, Great Falls; L. P. Reitz, grass nurseryman, of the Division of Forage Crops and Diseases; and O. R. Mathews.

Maximum temperature, 102°; minimum, 50°; precipitation, none.

JUDITH BASIN:

The past week has been a continuation of the drought that has held sway since the first week in June. Only 0.35 inch of precipitation was recorded during the month of July, and that lack of moisture, coupled with exceedingly high temperatures and evaporation, has cut the yields of all small grains to a minimum. Corn has held out against the drought better than other crops. All grain crops were harvested much earlier than usual. Winter wheat was ready to combine by July 20 and spring wheat soon after.

The cattle on native grass in the pasture experiment are just maintaining their weights, and the final weights of these animals are being recorded today. Cattle on bromegrass and crested wheatgrass pastures are still gaining weight.

The small grains from the rotation plots were threshed this week, and threshing of the Cereal varietal plots are now in progress. Yields range from 3 bushels per acre for spring wheat on fallow to total failures for the poorer methods.

O. R. Mathews visited the station July 29 and 30 in the interest of the dry land rotations.

Maximum temperature, 95°; minimum, 47°; precipitation, none.

HUNTLEY:

Drought continued throughout the week, but mean temperatures were below those of the previous weeks. Corn and sorgo show little change in condition, and if not destroyed by grasshoppers should still furnish a feed crop. Although the numbers of grasshoppers have decreased greatly, the remaining insects have concentrated on the corn plots, and despite efforts to control them have heavily damaged much of the crop.

Wheat harvest on the local dry-farms has been completed with yields ranging from 3 to 13 bushels of grain to the acre. Farmers have

estimated that grasshoppers were accountable for from 60 to 80 percent of their crop loss by cutting off the wheat heads just before maturity.

Station visitors during the week have included O. R. Mathews, C. S. Scofield, S. H. Hastings, of Washington, D. C., and Director Linfield with Profs. McKee, Morris, Slagsvold, and Burke, of the Montana Station.

Maximum temperature, 101°; minimum, 47°; precipitation, 0.01 inch.

SHERIDAN:

Maximum temperatures were not quite so high during the past week as for sometime past, but the weather still remained considerably warmer than normal. Much of the corn is still hanging on and will make a little feed, although no grain will be produced. Threshing on the station was completed. Yields have not yet been calculated, but only a few plots threshed out enough to record as anything but complete failures.

Russian thistles were mowed and hauled for hay where the growth was sufficient to mow.

O. R. Mathews arrived on the station this morning (August 1).

Maximum temperature, 99°; minimum, 51°; precipitation, 0.22 inch.

DICKINSON:

The month of July set several new records for heat and drought. A temperature of 114° on July 6 was the highest ever recorded here. Temperatures above 100° were recorded on 16 days, whereas 6 days was the previous record in 1933. Evaporation from the tank was 13.1 inches, while the previous record was 10.9 inches in July 1930. For the four months April - July, the evaporation is above 36 inches and more than the 29-year average for the 6 summer months.

| | | |
|---|---|---|
| Precipitation: | July | 0.29 inch. |
| | January - July (7 months) | 3.59 inches. |
| | September - July (11 months) | 4.89 " |
| | August - July (12 months) | 6.72 " |

For the first 7 months of the year the precipitation is the lowest of record. By coincidence the precipitation for the year ending with May 1920, was 6.72 inches, exactly the same as for the past 12 months.

All plant growth is practically at a standstill, except Russian thistle is making a meager growth on some fields. Livestock are grazing on thistle mostly as practically every other bit of feed has been gleaned. Shipments of stock continue as the summer passes with no rain sufficient to bring on growth of grass or weeds. Hay is now being shipped in, but considerable stock will be sent out yet unless rains come soon.

Fruit trees are maintaining their leaves better than in 1934. This is due in part to the fact that considerable killing of branches has resulted in a diminished leaf area to use water. Fruit is very small and of poor quality and the yield low or a total failure. Opata plum ripened this week. Corn on the rotation is about 12 - 18 inches high, and the meager growth from the scattered stands hardly keeps up with the damage being done by drought, grasshoppers, and rabbits. The increase corn intended for silage was pastured as were nearly all the fields in the district.

About half of the rotation plots were threshed. The best wheat on fallow made only 1.3 bushels. Most of the plots were truly failures.

More straw has been harvested in some years from a single plot than was obtained on the whole field this year.

Maximum temperature, 101°; minimum, 53°; precipitation, 0.01 inch.

MANDAN:

Agronomy - Another week of drought, but the heat was not excessive. There was only one day when the maximum reached 100°, and there were three days when it was below 90°. There were two days of high wind. Some corn is still alive but it is doubtful if it could make much growth even with good rains soon. Grasshoppers seem to have moved out, and very few are found in the fields.

The month of July makes a clean record for rainfall. There was zero rainfall during the month. A few drops of rain fell on two occasions, but there were no visible signs of it in the rain gauge. The previous low rainfall for July was 0.30 inch in 1895. The previous low for the station was 0.33 inch in 1925. The total precipitation for the year to date is 3.41 inches, and the past 4 months have only given 0.95 inch. There were 13 days during July when the maximum temperature reached 100° or more, ranging from 100° to 115°. The evaporation for July was over 12.5 inches, over 3 inches above the previous high of over 9 inches in 1919.

Maximum temperature, 100°; minimum, 55°; precipitation, none.

Cooperative Grazing Experiment - The 70-acre pasture, rotation pasture, and mixed grass pasture are all becoming very short. The steers showed fair gains during July in all pastures, and high gains in the mixed pasture, the feed of which was sweetclover. The clover looked very poor toward the end of the month, yet the steers showed good gains for the month. It will be necessary to move them soon unless good rains come.

Following are the gains of the steers in the various pastures for July and the season to date:

| Pasture (acres) | No. of Steers | Gain per head (pounds). May | June | July | 65 days |
|---|---|---|---|---|---|
| 100 | 10 | 34.0 | 59.5 | 49.0 | 142.5 |
| 70 | 10 | 30.5 | 61.5 | 44.0 | 136.0 |
| 50 | 10 | 40.0 | 63.0 | 33.5 | 136.5 |
| 30 | 10 | 42.0 | 69.5 | 34.0 | 145.5 |
| 70 (Rotation) | 14 | 37.9 | 57.9 | 30.0 | 125.7 |
| 7 (Crested wheatgrass) | 4 | 32.5 | 8.8* | 47.5 | 120.0 |
| 12.5 (Mixed) | 6 | 20.8 | 60.8 | 90.8 | 172.5 |
| 93 (Reserve) | 11** | 10.0 | 71.9 | 49.1 | 131.4*** |

* On crested wheatgrass 20 days and reserve for 10 days and July.

** 13 head during June.

*** Gain for 11 head.

The 50-acre and 30-acre pastures were not grazed in 1935.

The gains of steers in all pastures are remarkable, when it is considered the feed was practically all old except the sweetclover.

The normal gains of 2-year old steers for July was about 70 pounds per head. It is the first time we have run yearlings, so do not know what their gain should be. It is also the first time the pastures were ever in such a condition during July.

The gains on sweetclover were remarkable, and the pasture has done well to stand up as it has.

ARCHER: (Report for the two weeks ending August 1, 1936.)

During the week ending July 25 the drought continued with increased temperatures and deterioration of plant life. The corn crop suffered most. Beans and potatoes appeared to be at a standstill. The week ending August 1 was cooler with cloudiness and some fog. During the afternoon of July 31 showers were prevalent. The southwest portion of the Station received a shower which totaled 1.13 inches of precipitation, but the northeast portion received much less. The greater part of the precipitation fell within a half hour period. This caused considerable run-off but not sufficient to fill the buffalo wallows in the northeast pasture. The precipitation will be of aid to the corn, millet, Sudan grass, beans, and potatoes.

Work at the station consisted of mowing the small grains which were burned, and harvesting the increase fields of grain with a binder. The small grains in the rotation plots on the better methods of tillage are ripe and will be harvested as soon as soil conditions permit.

W. L. Quayle and A. M. Lee of the University of Wyoming; J. B. R. Dickey of the Pennsylvania State College; and J. B. Kuska, were station visitors.

Maximum temperature, 99°; minimum, 53°; precipitation, 1.17 inches.

NORTH PLATTE:

A break in the heat wave and drought came this week. A light shower was recorded last Saturday evening, and on Wednesday and Thursday the sky was overcast and a total of 0.55 inch of rain fell. If moderate temperatures continue through August with a normal rainfall, a fair corn crop will be harvested over this area.

All of the bulk and variety small grains have been cleaned and stored. Test weights were taken on all variety grain. Winter wheat on summer tilled land averaged 55 pounds, spring wheat 52 pounds, oats 28 pounds, and barley 38 pounds. The potatoes in the rotation plots are being dug today, August 1.

Anton Frolik, from the Agricultural College at Lincoln, visited the station to discuss a pasture and grazing program.

Maximum temperature, 106°; minimum, 57°; precipitation, 0.55 inch.

AKRON:

Drizzling rain set in Tuesday night to continue intermittently through Wednesday and that night. This is the first rain of real consequence at this station since June 9. Much of the corn on the station has not recovered as it was hoped it would, and unless more rain falls soon and a further recovery is effected the crop will be short. This rain was very timely for the beans, millets, and sorghums.

Threshing was and still is the work demanding attention. This rain may bring a weed control problem into competition too quickly. First sorghum heads were bagged in the nursery early in the week.

The 117 comparable tenth-acre plots on the uniformly cropped land to the west of the old rotation block averaged 25.9 bushels of Kanred wheat per acre. The preparation for the wheat was fallow. Oat and barley varieties ranged downward from 43.1 and 31.2 bushels per acre, respectively.

July passed with 1.85 inches or precipitation, 71 percent of normal. The excess precipitation up to July 1 will about bring the annual up to normal as of August 1. In addition to the measured

precipitation, there were 9 separate days of July on which trace readings were recorded. There were 15 days with maximum readings of 100° or above, 1 more than in July 1934. The absolute maximum of 106° reached in 1934 was equalled on two successive days of the past July.

E. W. Hardies of the Soil Conservation Service staff, Tucson, Ariz., visited the station in the interest of the grass nursery.

Maximum temperature, 106°; minimum, 55°; precipitation, 1.20 inches.

COLBY:

The drought continues almost unabated at this station. For two days at the beginning of the week it was much cooler and rainy. The precipitation here was less than a quarter inch. In many localities in this section of the State, however, heavy rains were reported.

The corn plots are practically dried up. Beans have dried up completely. Sorghums are struggling along, but are showing a lack of moisture even on fallow. On most of the plots the plants are not out of the listed ridges yet. Grasshoppers have done considerable damage to the corn, cutting off all the plants on some of the plots and in some fields. They are not nearly as numerous now as they were a week ago. Hordes of them were killed with poison, but most of them just emigrated.

Maximum temperature, 110°; minimum, 57°; precipitation, 0.24 inch.

For July - maximum temperature, 112°; precipitation, 0.31 inch; 49-year average, 2.49 inches. The mean temperature for July was 81°, which has been exceeded only by July 1934 and 1935. It was next to July 1910 the driest on record. The total precipitation for June and July, 1936, was 0.77 inch, which is the lowest on record for those two months together.

Precipitation, January - July, 5.97 inches; 49-year average, 11.51 inches.

C. E. Leighty visited the station on the 29th and 30th. L. E. Call, L. C. Aicher, and A. L. Hallsted visited the station on the 30th together with C. E. Leighty and E. F. Chilcott.

HAYS:

The period of continued drought and heat was interrupted by a drop in maximum temperature the 28th to 92°, and a rain 0.50 inch, which is the largest rain since May 28. This was followed by 0.10 inch the 30th. The first three days of the week were very hot and dry. The last three, cool and pleasant.

Corn on the project as well as most of it on commercial fields in this locality was burned beyond hopes of recovery for even a fair crop of stover. In many fields the stalks were stripped of all leaves by grasshoppers. Sorghum row crops have been retarded in growth, but those crops have already responded to the shower and cooler weather of the past three days with some growth and there are still prospects for a crop, the size of which will depend upon the conditions that prevail from this time forward.

C. E. Leighty, E. F. Chilcott, and L. E. Call were Station visitors Wednesday and Thursday.

Maximum temperature, 110°; minimum, 58°; precipitation, 0.60 inch.

The precipitation herewith reported for the week is also the total for the month of July. During the month of July the maximum temperature reached or exceeded 100° on 22 days.

GARDEN CITY:

The largest rain since May 27 came last Wednesday, amounting to 0.74 inch. Not only has it revived the row crops somewhat, but it has also lowered the temperatures. The total rainfall for July is 1.21 inches, as compared with 0.73 inch for June. The rainfall for the year so far is 2.73 inches below normal.

Field work consisted of one-waying plots that are to be late fall listed, and plowing under Sudan grass for green manure. Soil samples were taken from the evaporation plots.

Visitors at the station were C. E. Leighty, E. F. Chilcott, L. E. Call, A. L. Hallsted, and L. C. Aicher.

Maximum temperature, 108°; minimum, 63°; precipitation, 0.82 inch.

TUCUMCARI:

Moderate temperatures, low wind movement, and considerable cloudy weather the past week have induced very rapid growth of all row crops. Ranges are showing need of moisture. Conditions at present are the most encouraging in several years, but additional rain will soon be critically needed.

Precipitation of 4.40 inches in July was 2 inches above the 31-year normal and the highest of any July on record. However, since 3.38 inches fell within 5 hours, with much washing and burying of young row crops, it is doubtful if this torrential rain was even half as effective as the amount would indicate. Precipitation of 8.86 inches for the year to date is but slightly below normal.

Station work consisted of cultivating practically all plot and increase land; mowing weeds; cultivating and hoeing tree rows, orchard, and vineyard; and a start toward making plant counts on plots.

Maximum temperature, 99°; minimum, 60°; precipitation, 0.05 inch.

BIG SPRING:

Weather conditions during the past week have merely been a continuation of those prevailing during the past month, that is more hot and dry weather. Temperatures have not been quite so high as during the previous two weeks, otherwise there has been little or no change. The rainfall for June totaled 0.48 inch and that for July 0.95 inch. The latter amount was received in three showers varying from 0.11 to 0.50 inch. None of these rains wet the soil more than 3 inches deep, and they were little or no value to crops.

Spring plowing of plots requiring this treatment was not done until early May this year because of dry soil before that. The crops on these late spring plowed plots are now burning badly, while those on fall and winter prepared land are still holding up fairly well. There is a very marked difference in the size and condition of the crops on the two methods of seed bed preparation at this time.

Maximum temperature, 102°; minimum, 62°; precipitation, none.

LAWTON:

The 17-day period of high temperatures July 13 to 29, with an average maximum temperature of 104.7°, was broken by a shower of 0.46 inch on the 30th. Subsequent temperatures to date have not reached 100°, and a minimum of 57° was recorded August 1. A few local rains were recorded in various parts of the State during the last week in July, but there was no general precipitation of consequence. The July precipitation of 0.54 inch was 2.52 inches below normal, and the

deficiency for the first 7 months equals 8.74 inches. The mean temperature for July was 4.2° above normal of the year.

Depreciation of sorghums and cotton continues as in past weeks.

John H. Martin and J. B. Sieglinger visited the station August 1 and 2.

WOODWARD:

East winds with clouds part of the week and one light shower gave some relief from the hot, dry weather which started with the second week in June. However, early planted row crops are at a standstill, and unless good rains occur soon there will be a shortage of feed in this region for livestock this winter.

A few of the more drought resistant ornamentals such as flowering willow, tamarix, trumpetcreeper and crapemyrtle persist in making a splendid display of bloom despite the dry weather.

Station work for the week consisted of watering and hoeing nursery, cleaning seed wheat, cultivating sorghums, and picking grapes and tomatoes.

Maximum temperature, 107°; minimum, 60°; precipitation, 0.21 inch.

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BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

AUG 8 1936

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REPORT FOR THE WEEK ENDING AUGUST 8, 1936.

HAVRE:

Cooler weather and moderate precipitation occurred during the earlier part of the week, with mostly clear skies and rising temperatures prevailing thereafter. Corn was benefitted by the rain, but production will be somewhat below average. This rainfall, temporarily at least, reduced the fire hazard in nearby mountain areas.

Threshing experimental plots is now in progress, wheat yields ranging from complete failures to about 3 bushels per acre. The grain is light, testing less than 55 pounds per bushel. A few fields now being combined in the vicinity are yielding less than 5 bushels per acre. Other station activities included, cultivating fallow, weeding shelter belt plantings, and pulling out dead trees.

Maximum temperature, 93°; minimum, 47°; precipitation, 0.70 inch.

JUDITH BASIN:

Light showers were received this week, and temperatures have dropped materially as compared with previous weeks. The precipitation was not sufficient to start growth of pastures but will aid late corn to some extent. Threshing of all crops was completed this week; the earliest in the history of the station that the harvest has ended. Yields of spring wheat ranged from 4 bushels on fallow to failure.

Three of the animals pastured on native grass in the pasture test were slaughtered this week, and the final weights on the bromegrass and crested wheatgrass animals were recorded. These animals will be killed as soon as practicable for carcass and meat studies.

Maximum temperature, 91°; minimum, 46°; precipitation, 0.35 inch.

HUNTLEY:

Climatic conditions of last week were not much different from those of the previous one. Nights have continued comfortably cool with day-time temperatures ranging up toward 100° on several days. Corn, sorgo, and Sudan grass continue to develop, but all are still stunted as a result of the continued warm weather and drought, although none of the crops show much burning as yet.

Hogs on Sudan grass pasture appear to have found the crop quite palatable and made good gains over the last two-week period. Although grasshoppers destroyed most of the leaf growth of soybeans in the combination Sudan-soybean pasture, the hogs have shown their liking for the crop by rooting out and eating all of the defoliated stalks.

Maximum temperature, 100°; minimum, 42°; precipitation, 0.09 inch.

SHERIDAN:

While much of the remainder of the State was receiving from fair to heavy rains, over an inch falling on the mountains immediately west of here and heavy showers falling in some places to the east, only somewhat cooler weather with one heavy wind storm prevailed over this section. Warm weather prevailed again over the last of the week.

Corn that was fired the most in the rotations, over half the plots in that field, was cut. It probably will be necessary to cut the remainder of the corn on the station the first of next week in order to save what little growth there is for forage. Some of the sorgo on spring plowing still remains in fair condition although the

growth is small, but that on fall plowing is badly fired with little or no growth.

While temperatures during July were not so high here as were reported from many sections, the month was the hottest yet recorded on the station. The mean temperature was about 5° higher than previously recorded; with an average maximum temperature of 97°, 14 days 100° or above. Precipitation, 1.01 inches, was higher than for several years, but 0.24 inch below the station average, and none of it fell in sufficient quantity at one time to be of any benefit to crops generally, with the ground as dry as it was before the rain.

Maximum temperature, 97°; minimum, 42°; precipitation, trace.

MANDAN:

Agronomy - The past week has been cool and a trace of rainfall was recorded, the first since June 25. One day the maximum temperature was but 69°. A few plots of grain that were harvested were run through the thresher. A few plots may show a slight yield after cleaning. Some of the corn is still alive, but with plenty of rain there is little chance of its making anything.

Maximum temperature, 100°; minimum, 54°; precipitation, trace.

Cooperative Grazing Experiment - Pastures are becoming shorter, but the steers are still on them. Some of the steers will need to be moved very soon.

Visitors for the week included Congressman W. R. Thom (Canton, Ohio.) Member of the House Appropriation Committee, who spent Tuesday and Wednesday inspecting the Field Station and the drought areas in western North Dakota. He was accompanied by Superintendent Stephens.

BELLE FOURCHE: (Report for the two weeks ending August 8, 1936.)

The drought continued unbroken, but comparatively cool weather prevailed July 26 - 30, and August 2 - 5, affording welcome relief from the excessive heat. Showers were quite general over the section during the last week in July, and heavy downpours occurred in a few localities, but in most instances the rains were too light to be of benefit to plant growth.

Practically all hot weather records were broken during July, including the mean temperature for the month, which was 81°. The highest mean temperature for any month in the previous 28 years of record was 77°, and the average for July is 72°. A total of 1.09 inches precipitation was received during July, which is 1.23 inches below normal. The evaporation for the month, 10.224 inches, was third to the highest of record, and exceeded the average for July by 2.309 inches.

Harvesting of all corn, except that on summer fallow, was completed. Small grains were threshed, and the maximum yields per acre were winter wheat, 1.8 bushels; winter rye, 1.1 bushels; spring wheat, 3.0 bushels; barley, 6.7 bushels; and oats, 7.8 bushels. Flax was a total failure.

Visitors included, R. S. Towle; O. R. Mathews; C. S. Scofield; S. H. Hastings; Dan Hansen; J. K. Wallace, Bureau of Agricultural Economics; A. C. Hildreth, Cheyenne Horticultural Field Station; and I. B. Johnson and A. L. Ford, South Dakota Extension Service, Brookings.

A boys 4-H Club camp was held at the station July 31 and August 1. Boys and county agents from 4 counties were in attendance.

Maximum temperature, 99°; minimum, 50°; precipitation, 0.27 inch.

ARCHER:

The weather during the week ending August 8 was a continuation of what started July 31. The precipitation of July 31, 1.13 inches, added to the precipitation during the past week, 1.57 inches, moistened stubble ground to a depth of about 12 inches. It revived the corn, potatoes, beans, millet, and Sudan grass. The yields of the last four crops and the late varieties of corn will be materially increased. The late varieties of corn are generally used for fodder. The native grasses have greened up and renewed growth is taking place.

O. R. Mathews and R. S. Towle of the Division of Dry Land Agric.; and G. H. Starr, A. M. Lee and L. H. Scrivner of the Univ. of Wyo. were station visitors during the week.

Maximum temperature, 86°; minimum, 52°; precipitation, 1.57 inches.

NORTH PLATTE:

The heat wave seems to have been broken, and moderate temperatures prevail over this area. Except for August 2 the maximum temperature for the week was 80°. Light showers fell on August 3 and 4.

The corn remains green but the tassels have been burned, and poorly filled ears can be expected. The variety corn on the bench was put into the silo this week. The variety corn on the table will be permitted to stand for a few more days to see if it will be of any value for experimental data. Moisture determinations were made on several plots this week, and the summer tilled plots have a good supply of available moisture present below the first foot. The potatoes on the D. L. A. plots were dug this week. An average of 50 bushels per acre was obtained and graded approximately 50 percent first grade.

Maximum temperature, 100°; minimum, 56°; precipitation, 0.18 inch.

AKRON:

Saturday evening brought another drizzling rain of 0.75 inch, which was followed by cool, partly cloudy weather. An additional 1.20 inches on Thursday all soaked into the soil. Friday morning an attempt made to resume threshing, but it was found the barley was still soaked in the middle of the bundles. The oats which were on the wagons Wednesday afternoon, and run under cover, were threshed, completing this rotation project. Yields ranged from a low of 10.3 bushels on the subsoiled plot of the continuous cropping series to 34.7 bushels per acre, an average of three fallow plots, with a general average of 19.7 bushels per acre from the 33 plots. It is estimated that threshing is from one-third to one-half completed by this week-end.

Some field cultivation and considerable weed control work with hoes was accomplished during the period the straw was too wet to thresh.

The total rainfall thus far in August is 1.97, nearly equal to the term average of 2.23 inches. The total for the past 10-day period amounts to 3.17 inches. The rainfall this year has all been of the slow drizzling type, and has all soaked into the soil.

D. D. Dobson, and R. H. Bond of the Soil Conservation Staff at Colorado Springs, spent Saturday forenoon at the station seeking crop information.

Maximum temperature, 96°; minimum, 55°; precipitation, 1.97 inches.

COLBY:

This week has been much cooler. Nearly an inch and a quarter of rain on Thursday ended the drought temporarily. Corn was practically beyond help in most cases, but the sorghums are in most cases making fair growth so that considerable feed will probably be produced. The ground is wet down about 6 inches. Pastures have not started greening up yet.

Maximum temperature, 101°; minimum, 59°; precipitation, 1.24 inches.

HAYS:

Cool, damp weather has prevailed all week except for one day when the maximum temperature reached to 100°.

The change in climatic conditions has improved the prospects for sorghum grain yields and for other forage crops that have survived the drought and heat. The pity is that there is such a small acreage of such crops. The moisture that has fallen during the week under the conditions that have prevailed (part cloudy and cool) will carry the crop for another week in good condition, but more rains will be necessary to make a satisfactory yield.

Maximum temperature, 100°; minimum, 60°; precipitation, 0.88 inch.

GARDEN CITY:

There has been considerable cloudy weather and rather cool temperatures but little rain this week. The feterita and Sumac are heading out, but the corn, which has tasseled and has ears forming, is probably too far gone to yield anything. Soil samples were taken on the M.C.milo plots A and B, the M. F. milo plots L and M, the milo diked plot, the different spaced milo plots, and on the evaporation plots.

The trees along the west side of the project, which have died due to lack of moisture, were pulled out. It is planned to put in the small leaf Chinese elm (Ulmus parvifolia) and irrigate them.

L. F. Locke was a visitor.

Maximum temperature, 100°; minimum, 59°; precipitation, 0.13 inch.

TUCUMCARI:

During the past week drought has wrought havoc with the appearance of ranges and crops. After heavy precipitation early in July, growth was rapid and succulent, but little moisture existed below the surface layer of soil. Three weeks without rain of benefit, during a period of rapid crop development, culminated with extensive wilting and rolling of vegetation. Little firing has occurred but is expected daily.

Corn is tasselling and many milo plots are emerging from the boot, making this a very critical period for both crops. Kafir will more successfully await rain without serious damage.

Visitors included C. E. Leighty, E. F. Chilcott, A. Grimes, and J. E. Smith.

Maximum temperature, 99°; minimum, 63°; precipitation, none.

DALHART: (Report for the week ending August 1, 1936.)

The weather remained warm and dry during the past week. Sorghums continue to grow normally, except for early plantings of Sudan grass and for sorghums growing on early fall plowing. The latter preparation is showing severe drought shortening. Soil moisture samplings indicate that the soil moisture available to support crop growth is short. As

the sorghums are just starting to head a shortage of moisture at this time is reducing potential yields.

Maximum temperature, 101°; minimum, 60°; precipitation for July, 1.49 inches, January - July, 7.99 inches.

DALHART:

Another dry week has caused all sorghums planted previous to June 15 to wilt during the hot part of the day. With the exception of some corn and Sudan grass plots the station crops have not suffered beyond recovery if a rain should come soon. The sorghums in rotations as well as most of the variety plots are heading now, and many of the plots do not have sufficient soil moisture to complete this stage of plant growth. Growth is retarded on all crops but not to a serious extent on fallow or on late planted plots. The early broomcorn plots have apparently suffered beyond satisfactory recovery. Cowpeas show retarded growth but otherwise appear vigorous. Grapes do not appear to be suffering noticeably. The early varieties will do to harvest the first of the week. Bagging of seed heads of sorghums has proceeded rather slowly because of the retarded emergence due to drought. Crops of sorghums on farms, while showing a moisture shortage, could produce ample feed should rains come soon.

Maximum temperature, 98°; minimum, 61°; precipitation, trace.

BIG SPRING:

Another week of hot, dry weather has not improved the crop prospects of this section. In fact they are just a little closer to the point where they will soon be beyond the point of recovery. Many of the sorghum plots that have remained green are now showing wilted spots, and it will not be long before the entire plot will be in the same condition. Much of the cotton is blooming in the top, which means that it has just about exhausted its possibilities for a crop. Some cowpeas in the varieties and the rotations were harvested during the week.

C. E. Leighty and E. F. Chilcott were station visitors August 6 and 7.

Maximum temperature, 99°; minimum, 65°; precipitation,0.

LAWTON:

Maximum temperatures ranging from 100° to 109° continued to parch vegetation of all kinds. Deterioration of sorghums has been very rapid the past week. Cotton is also showing severe heat and drought damage. Blooms have been confined to the tops of the plants for some time, and the foliage is showing considerable burning. Most of the plants carry from 1 to 2 small bolls.

C. E. Leighty and E. F. Chilcott visited the station August 9 and 10.

WOODWARD:

Another week has passed with only one small local shower to give temporary relief from the hot, dry weather. Row crops are making very little growth, but seem to be patiently awaiting more favorable weather conditions.

Crapemyrtle, flowering willow, trumpet creeper and vitex are still making a brave display of bloom in defiance of the drought.

Station work for the week consisted of cultivating sorghums, cleaning seed wheat, taking soil samples, watering nursery, and picking grapes.

Maximum temperature, 104°; minimum, 62°; precipitation, 0.37 inch.

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# WEEKLY STATION REPORTS

OF THE DIVISION OF

## DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

AUG 15 1936

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REPORT FOR THE WEEK ENDING AUGUST 15, 1936.

HAVRE:

Moderate temperatures and a few light scattered showers characterized the weather of the week. Owing to precipitation earlier in the month, Russian thistles are now making considerable growth.

Threshing in the experimental field was completed, the yields in general being the poorest in station history. The highest yield of spring wheat was 2.0 bushels per acre from a fallow plot in the MC series. The largest yield of oats was 3.8 bushels per acre from a fall plowed plot in rotation 6b. The best yield of spring rye was less than 1 bushel per acre, although rye plots had considerable straw in comparison with other small grains. Barley was nearly a complete failure being injured severely by grasshoppers, in addition to drought.

Station visitors included C. C. Starring and C. L. Englehorn of the Soil Conservation Service, Great Falls, who were interested in shelterbelt survivals.

Maximum temperature, 97°; minimum, 52°; precipitation, 0.05 inch.

JUDITH BASIN:

Temperatures for the first three days of the week were very high, and the air did not cool off during the night as it usually does at this altitude. Wednesday night a good shower brought 0.59 inch of water, and the temperatures for the last half of the week were cool. This rain was not uniform throughout the Judith Basin, and additional moisture is needed to insure fall pasture and put fields in good condition for seeding winter wheat.

A comparison of the precipitation records for the growing months of April, May, June, and July in the three extreme drought years, is given below:

| Year | April | May | June | July | Total |
|---|---|---|---|---|---|
| 1919 | 0.17 | 0.73 | 1.08 | 1.02 | 3.00 |
| 1934 | 0.24 | 0.96 | 2.70 | 1.38 | 5.28 |
| 1936 | 1.43 | 1.03 | 1.74 | 0.35 | 4.55 |

These figures show the current season to be somewhat drier than 1934 but not nearly so dry as the same period in 1919.

Maximum temperature, 96°; minimum, 53°; precipitation, 0.61 inch.

HUNTLEY:

Seasonal temperatures have prevailed throughout the week. Rain has threatened on several days, but only two light showers were received locally, although much heavier precipitation was reported from nearby communities. For the first time this season sorgo and Sudan grass are looking really dry. These crops have been stunted for some time but up until this week have managed to stay green. They are now beginning to burn seriously. Both crops are headed out.

What remains of the corn in the rotation plots is being harvested by hand because of the uneven growth and heights in the individual plots. Because of grasshopper damage a large percentage of the plants in most of the plots is too short to cut with a corn binder while the remaining plants are too tall to harvest with a grain binder. Very few plants produced ears, but a number of the

plots will return a fair yield of forage.

Weeds, mostly Russian thistles, have made a remarkable growth in stubble land during the last few weeks despite the continued drought. In many cases it has been necessary to remove the extra heavy weed growth from the plot edges to permit the efficient use of the plow and other tillage implements.

Maximum temperature, 101°;minimum,55°;precipitation,0.07 inch.

SHERIDAN:

Average temperatures still continue the highest yet recorded here for this late in the season. The remainder of the corn was harvested, and all of the corn hauled from the field and shocked in the corral. Sorgo, Sudan grass, and the few plots of flax still remaining with sufficient growth on them were fenced and the sheep given the run of the remainder of the fields. A few more Russian thistles were mowed and hauled for feed.

Maximum temperature, 103°; minimum, 59°; precipitation, 0.07 inch.

DICKINSON:

Moderate temperature most of the week made conditions more endurable. A shower on the 12th was of slight value. Corn on the rotations was mowed the first of the week. The best plots will make less than 500 pounds of feed per acre, and the poorest were total failures due to poor stands and grasshopper damage. It appears that the hoppers have thinned out the latter part of the week. A few loads of Russian thistle were cut from idle land on the Normal School field.

Several varieties of plums were picked during the week. The fruit was only about half normal size but not quite so shrivelled and tasteless as in 1934 and 1935. Fair yields were made by the Compass and Mandan 81.

Maximum temperature, 104°; minimum, 52°; precipitation, 0.11 inch.

MANDAN:

Agronomy - The past week has been reasonably cool, part of the time. The maximum temperature reached 100° on three days. A shower of 0.04 inch fell on the morning of the 12th. This is the first in excess of a trace since June 26 when 0.04 was recorded. About the only crop left is corn, but it is now so late that even good rains could have little influence on it. Practically all places where ears should be are smut masses.

Maximum temperature, 100°; minimum, 59°; precipitation, 0.04 inch.

Cooperative Grazing Experiment - Steers were moved from the sweetclover pasture as there was little feed left. They just about held their own in weight during 10 days in August.

Visitors for the week included W. A. Jump, Department of Agriculture, and Colonel Flasher, Bureau of the Budget, who inspected the Field Station with Superintendent Stephens on Wednesday. W. H. Alderman, Head of the Department of Horticulture of the University of Minnesota, accompanied by Messrs. L. E. Longley, F. E. Haralson and T. S. Weir, of the University, also visited the station.

BELLE FOURCHE:

Hot weather prevailed the greater part of the week, but owing to cloudy skies, and the cooling effect of light showers during some of the afternoons, the temperature remained below 100° every day except one. None of the rains was heavy enough to benefit crops, and further

deterioration of sorgo and potatoes occurred. Russian thistles have made a miraculous growth, and field work has included mowing and hoeing of thistles.

Maximum temperature, 101°; minimum, 58°; precipitation, 0.24 inch.

ARCHER:

The weather was warm during the forepart of the week and cooler during the latter part. Local showers were frequent during the last half of the week. The station received a light sprinkle and a shower totaling 0.25 inch.

The fodder corn, beans, millet, Sudan grass, and potatoes are making good growth. The early maturing corn was revived by the moisture of the previous week, but most of it was so far advanced that little grain will be produced except in favored spots. The grasses have made considerable growth and the prairies are green.

Work at the station consisted of cultivating corn, Sudan grass, and stubble land in the dairy fields. On this date the trees are being cultivated.

On August 10 a group of 20 farmers from the Lusk section spent a half day at the station for the purpose of studying the experimental work.

John Martin, U. S. Dept. Agriculture, and W. L. Quayle and G. H. Starr of the University of Wyoming, visited the station during the week.

Maximum temperature, 92°; minimum, 55°; precipitation, 0.33 inch.

NORTH PLATTE:

The cool weather of last week was followed this week by more high temperatures. Temperatures for the first five days were over 100°, and the remaining days were nearly as warm. There was little wind and no rain.

Several of the D. L. A. plots have been early fall plowed. The soil is very dry and hard, and plowing is a very slow process. The increase corn on dry land has been mostly cut and put into the silo. Sorghums and kafirs are still looking good and will make forage and grain, if a little rain falls within the next two weeks.

H. O. Werner, horticulturist from the Agricultural College, spent Friday at the station.

Maximum temperature, 106°; minimum, 59°; precipitation, none.

AKRON:

A full week of threshing finds the station within three or four days of the completion of this work. The rotation plots were cleared by Thursday night, and a start was made at the early fall plowing and other plot preparations Friday. Ground is plowing nicely following the recent rainfall of 3.17 inches, but thistles have already attained such size as to be really troublesome. Bunchy in character, they are a hard weed to turn under, once they have exceeded a certain primary growth stage.

The badly drought stunted corn is now silking and promises to fill nubbins. Corn not stunted is filling a nice long ear. There seems to be ample promise of an average corn crop throughout this section of northeastern Colorado. The proso, foxtail millets, sorghums and beans have really grown since the recent rainfall.

Fifty-six rotation winter wheat plots averaged 18.2 bushels of grain and 2,580 pounds of straw per acre. Twenty-one plots of barley averaged 17.2 bushels of grain and 1,220 pounds of straw per acre. Twenty-two plots of spring wheat averaged 4.7 bushels of grain and 1,711 pounds of straw per acre. The 30 plots of winter wheat on the rate and spacing corn project averaged 20.5 bushels of grain per acre.

Grama grass has greened, and is heading since the recent rainfall; buffalo grass still remains dormant. Purslane is appearing as the annual weed in the badly depleted hard land pastures.

Tip-bud-moth of the evergreens has at last made its appearance at this station and may cause the recently set ponderosa pines to average much less annual growth than the earlier plantings.

Mr. Henderson, State Extension Specialist in cereal smut control; Chas. McDaniel, Assistant County Extension Agent; and Mr. Greenawalt, Smith-Hughes teacher in the Cope High School, visited during the week.

Maximum temperature, 99°; minimum, 60°; precipitation, 0.01 inch.

COLBY:

The hot, dry weather continues. The temperature has risen to 100° or higher every day for 7 consecutive days. A shower and dust-storm last night did not cool things off much.

The listed corn, milo, sorgo, and feterita plots were leveled this week. The corn has almost all dried up and disappeared. The sorghums are backward, but are making fair growth since the rains earlier this month. The August 15 plowing was done today, also some fall one-waying for corn. The ground is moist down about 7 inches and turned up mellow in most instances.

Maximum temperature, 109°; minimum, 63°; precipitation, 0.05 inch.

HAYS:

Drought and heat have prevailed since August 8, when a small rain and cooler weather were reported. The light rain brought temporary relief and started a little new growth on the sorghum plots, but with the return of high temperatures and hot winds, growth and natural development has again been halted. Kafir is at a stand-still at from 18 to 24 inches high. It is wilting every day but is not burning. Milo is about 2 feet high and is wilting badly. There seems to be little or no real firing, but there are brown streaks on many of the leaves resembling firing. No heads have emerged. Wheatland milo is 12 - 15 inches high and is showing an occasional head. This crop is also suffering from drought. The remnants of the corn range from 2 to 4 feet high and are in tassel as a result of the shower reported last week, but the tassels were cooked immediately upon emergence and very few silks have developed, these were quickly devoured by grasshoppers. The corn can make nothing more than a very light yield of fodder.

Grasshoppers are pretty well under control at present. An invasion about a week ago increased the population, but another application of poison bran mash the first of the week reduced the population to nearly normal for the locality.

Maximum temperature, 113°; minimum, 66°; precipitation, trace. Weather Bureau maximum, 115°. It has been interesting to note during the heat period this year that the maximum temperatures registered by the Dry Land project thermometer has on several occasions failed to go as high by 2 or 3° as the Weather Bureau thermometer. It is likely that a block of kafir which this year is growing immediately south of the

project instruments may have a cooling effect on the hot south winds that pass through the instrument shelter.

GARDEN CITY:

The maximum temperature for one day of this week was 101°, and for the remaining days it ranged from 105½° to 108°. There was no rain, except a trace, with these high temperatures and thus considerable damage was done to the crops. Several of the kafir and milo plots on green manure are beyond recovery, but the milo on fallow is heading out.

Field work consisted of plowing, listing, and one-waying those plots that go into wheat or are to be fallowed. Several of the listed plots are being dammed by hand. We are just starting this method and hope to gather some interesting information.

Maximum temperature, 108°; minimum, 64°; precipitation, trace.

DALHART:

With four days of the week giving maximum temperatures higher than recorded previously this year, and with the continued dry weather, the sorghum crops have deteriorated daily during the week. The previous highest maximum temperature recorded for August was 104°. This record was broken with two temperatures, one of 105° and the other of 106°. This latter temperature is the highest maximum recorded for this station and has only been equalled twice before, on June 30 and July 14, 1933. With the normal heading stage for sorghums at this season, and with a severe shortage of soil moisture, it is only too evident that crop prospects have gone 'simmering' during the week. Rain could still revive some of the plots, but yields would necessarily be low should moisture come at once. Cowpeas, while suffering, would revive if moisture came soon.

All Sudan grass plots were harvested this week. On one plot the plants actually appeared dead. Other work during the week has consisted of bagging marginal heads, picking a few grapes (with a very low yield on those harvested), and digging out near dead trees.

Maximum temperature, 106°; minimum, 61°; precipitation, none.

TUCUMCARI:

The hottest weather of the year, with no beneficial precipitation for over a month, reduced crop prospects materially the past week. Rolling and firing are general on plots and increase crops, and daily deterioration can be seen. After a heavy rain July 11 crop growth was exceptionally rapid, but at present great injury has occurred, and unless rain falls soon yields will be very low. Ranges are turning brown rapidly, and it is doubtful if seed will mature on the majority of plants which were in bloom when drought effects were first felt.

Both crop and range prospects have deteriorated perhaps 50 percent the past 10 days under a scorching sun. Temperatures have equalled or passed 100° six of the past seven days, with an absolute maximum of 105° on the 13th.

Maximum temperature, 105°; minimum, 65°; precipitation, none.

BIG SPRING:

Weather conditions during the past week have been the hottest of the season. The maximum thermometer registered above 100° every day with 109° as the high point on August 13. Crops throughout the county have deteriorated faster during the week than at any other

time; potential yields of cotton are being reduced daily. Cowpeas in the rotations and in increase fields were cut during the week. The spring-plowed plots yielded a very light crop of hay, but the fall-plowed ones were about normal. Other station work consisted of picking cowpea seed, bagging sorghum heads, and hauling in Sudan grass hay.

Maximum temperature, 109°; minimum, 68°; precipitation, none.

WOODWARD:

The same report must go in from this station as is going in from most other stations - no rain and excessive temperatures. Some of the sorghums for a long time failed to develop roots which went below the surface few inches. Due to a few light showers over the past month, root development has been greatly stimulated. This allows sorghums to hang on so there will be at least considerable feed from them if rains occur within the next two weeks. Grapes are giving for the most part a low yield of shriveled fruit. The cantaloupe, watermelon, and tomato experiments will be disked up.

The crapemyrtle gives the principal ornamental effect. The flowering willow and vitex seem about through with their bloom period. They usually bloom freely until somewhat later.

Maximum temperature, 113½°; minimum, 73°; precipitation, none.

PENDLETON: (Report for the two weeks ending August 15, 1936.)

During the past two weeks practically all wheat farmers have completed their harvest. The harvest season was very favorable this year, in that there were no extremely high temperatures, heavy winds, rains, or dews. The harvest crews could start work as early as desired and work until dark. One farmer tried combining at night with very indifferent success. Yields of wheat were not so high as anticipated, Umatilla County production being about 4,500,000 bushels, as against an estimated production of 5,500,000 bushels. Spring wheat yields in most instances were higher than winter wheat, the spring wheat benefitting by the June rains. The quality of the wheat is very good, most of it grading No. 1. In the drier areas a protein premium is being realized, some wheat testing 15 percent protein.

Yields of winter wheat and spring wheat on this station:

| | | | |
|---|---|---|---|
| Winter wheat after fallow | | 44.5 | bushels. |
| " " " | corn | 25.9 | " |
| " " " | peas | 23.2 | " |
| " " " | sweetclover | 34.7 | bushels. |
| " " " | winter wheat | 10.4 | " |
| " " " | beans | 27.3 | " |
| Spring wheat after fallow | | 47.0 | bushels. |
| " " " | corn | 26.6 | " |
| " " " | oats | 16.6 | " |
| " " " | peas | 31.1 | " |
| " " " | beans | 33.4 | " |
| " " " | spring wheat | 20.7 | " |
| " " " | winter wheat | 19.1 | " |

Maximum temperature, 102°; minimum, 46°; precipitation, none.

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U. S. DEPARTMENT OF AGRICULTURE

AUG 22 1936

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REPORT FOR THE WEEK ENDING AUGUST 22, 1936.

HAVRE:

Weather during the week was mostly fair with normal temperatures and a few light scattered showers. Ranges are still extremely dry, and a small fire occurred on the Bear Paw lease, presumably started by lightning. No extensive damage resulted, about 4 acres being burned over before the blaze was extinguished.

Experimental agronomy activities included fanning grain, obtaining test weights, and threshing nursery material in the seedhouse. The first date of planting winter wheat was made on fallow, soil moisture being insufficient for uniform germination. On the general farm, the third cutting of a sub-irrigated alfalfa field is in progress, and an additional tonnage of Russian thistle hay is being put up. Weeds were also hoed in various shelter-belt plantings.

Station visitors included D. W. Chittenden, Dept. of Animal Husbandry, Montana State College; E. J. Maynard, Great Western Sugar Co., Billings; and E. G. Davis, U. S. Entomological Laboratory, Bozeman.

Maximum temperature, 92°; minimum, 45°; precipitation, 0.04 inch.

JUDITH BASIN:

Light showers the first part of the week brought the total precipitation for the first three weeks in August to 1.35 inches. Rainfall has been spotted, however, and some sections have considerably more moisture than the above figure. Grasses have started growth again, and good fall pasture will be available if more rain is forthcoming. Corn on the dry land rotation plots was cut and the green weights were recorded.

D. W. Chittenden, Montana State College; and E. J. Maynard, Great Western Sugar Co., Billings, were station visitors August 20.

Maximum temperature, 89°; minimum, 46°; precipitation, 0.39 inch.

HUNTLEY:

Scattered showers throughout the week have served to cool the atmosphere but have not added any moisture to the soil that would benefit crops or facilitate fall plowing. Nearby areas have had precipitation approaching cloudburst proportions, but most of the moisture so received was lost by runoff.

Alfalfa on the dry-land plots has shown some revival with the cooler weather and has made a small growth. Crested wheatgrass has shown no fall growth as yet. Sorgo and Sudan grass, except for the border rows and low places in the field, are drying up. Hogs pasturing these crops appear to find the forage still palatable and continue to feed upon it.

Field work during the week has consisted of hand-harvesting the corn from the rotation plots, repairing fences, and threshing.

Maximum temperature, 97°; minimum, 47°; precipitation, 0.33 inch.

SHERIDAN:

Much cooler weather prevailed over the most of the week than for some time. Showers threatened on several occasions, but only resulted in heavy winds with the most severe soil blowing that has occurred over this section for several years, for short periods. Disking or duckfooting of plots for fall seedings was done. Rains have not been

sufficient to pack the soil any since it was worked in the spring, and the surface is exceptionally loose to a depth of 3 - 4 inches. Mowing and hauling of Russian thistles for forage was continued throughout the week.

Maximum temperature, 99°; minimum, 51°; precipitation, trace.

MANDAN:

Agronomy - The past week has been cool with two rainfalls, 0.16 inch on the morning of the 20th and 0.28 inch on the afternoon of the 21st, which was the greatest fall since April 30. Corn is now about dried up. Russian thistles have made a little growth in stubble during the season so they now show up as a fair growth.

Maximum temperature, 93°; minimum, 54°; precipitation, 0.44 inch.

Cooperative Grazing Experiment - Steer weights were checked during the week and most of them are still making some gain. The steers will need to be moved from two or three of the pastures very soon.

Horticulture - A number of plum varieties were picked during the week. Yields were light and most of the fruit was undersized. Sel. 26-1, a native selection, was one of the best picked. La Crescent also did well considering the dry season. Dalgo and Alexes crabs were also picked, but they were very small and the yields low. Florence crabs are yielding heavy crops of small fruit and are about ready to be picked.

Visitors included H. J. Harper, Oklahoma State Experiment Sta.; P. J. Olson, Assistant Dean and Director, E. J. Thompson, Professor of Animal Husbandry, and George Baker, Extension Live Stock Specialist, of the North Dakota Agricultural College; H. M. Hoover, R. D. Anderson, L. M. Sloan, and Mr. Coles, of the Soil Conservation Service.

BELLE FOURCHE:

Cool weather prevailed during the greater part of the week, and light showers were received nearly every day. The precipitation was not heavy enough to be of permanent value to plant growth; but sorgo and other growing crops were benefitted temporarily by the moderate temperatures, frequent showers, and increased humidity. Late crops grown under irrigation made very marked development. The ground continues too dry and hard to permit fall plowing.

Visitors included A. D. Stoesz and H. L. Alexander, Soil Conservation Service, Mandan, N. Dak.; and J. M. Stephens.

Maximum temperature, 96°; minimum, 53°; precipitation, 0.58 inch.

ARCHER:

During the past week the weather varied from quite warm during the forepart to cool and cloudy with showers during the latter part. The station received a shower totaling 0.37 inch, August 20. The prairies are green, and the late maturing crops not too severely injured by the drought are making a good growth.

The annual Farmers' Field Day was held at the station August 20. Notwithstanding the busy season about 200 farmers were in attendance. Interest was shown in the new methods of tillage and also in the systems of rotations used for the production of feed for the station livestock.

Work at the station consisted of weed eradication, seeding winter cereals, and tilling stubble land.

J. A. Hill, W. L. Quayle, J. J. McElroy, and W. O. Edmondson were station visitors August 20.

Maximum temperature, 91°; minimum, 47°; precipitation, 0.39 inch.

NORTH PLATTE:

Overcast skies Thursday and Friday brought a total of 1.17 inches of rain. Temperatures are generally cooler. Enough moisture is present in the soil to prepare for fall seeding.

A. L. Frolik from the College of Agriculture at Lincoln and L. C. Newell from the Soil Conservation Nurseries of Lincoln were at the station this week to aid in seeding grass for comparison of cultivated and native forage species in an irrigated pasture. A study is to be made of the relative establishment, palatibility to livestock, yields, and longevity of 11 cultivated and 8 native forage species under irrigated pasture conditions at North Platte. In addition 4 mixtures of cultivated species and 3 of native species were included for study.

All early fall plowing has been completed, and grass mixtures have been seeded in the D. L. A. plots. All of the sorghums are headed with the exception of Atlas.

Maximum temperature, 104°; minimum, 64°; precipitation, 1.17 inches.

AKRON:

The threshing of the experiments containing early spring seeded small grains was completed during the week. The remainder of the nursery harvesting will be run through the Case thresher next week.

It was necessary to cultivate all the orchards and the potato, bean, and soybean plots of the rate and spacing project to eliminate pig weeds which sprang up following the rainfall the last of July and the first of August.

The early fall preparation of the rotation plots was completed Tuesday. The first cutting of Sudan grass on the sorghum variety series was accomplished. The Sudan grass was rank, about 44 inches high, and just breaking into head.

Visitors were V. E. Jakl, Air Service Section, Weather Bureau, Chicago; Robert Clarkson, Rehabilitation Section, Denver Resettlement Office; E. W. Nelson, and G. L. Hovey, Range Management Section, Colorado State College; and S. Y. Tang, graduate student at the Kansas State Agricultural College.

Maximum temperature, 100°; minimum, 54°; precipitation, 0.19 inch.

COLBY:

This has been a week of changeable weather and local thunder showers which were rather widely scattered. The precipitation here was less than a fourth of an inch. After 11 days when the temperature rose to 100° or above there was a slight drop in temperatures during the last three days. Yesterday the maximum temperature was only 83°, but today it is climbing into the upper 90's again.

The sorghum crops are beginning to show rather serious drought injury. About the only thing that responds noticeably to the small showers is the Russian thistle. Along the edges of the plots the thistles are making a rank growth. Grasshoppers are present in rather large numbers and are keeping farmers generally from seeding wheat.

Maximum temperature, 104°; minimum, 61°; precipitation, 0.19 inch.

HAYS:

Another dry, hot week about to be placed on record was brought to a sudden close yesterday (Friday) by 1/2 inch precipitation early in the afternoon and a drop in temperature from 100° to 66°. Last night 0.22 inch additional precipitation was added to the record, and this morning the weather is cloudy, damp and quiet. The condition of the corn and sorghums remains unchanged, except for a few plots of corn which show considerable deterioration. Pastures are still brown.

Maximum temperature, 108°; minimum, 65°; precipitation, 0.73 inch.

GARDEN CITY:

Friday ended a heat wave that lasted 13 days, the maximum temperatures ranging from 100° to 108°. During these 13 days there was only a trace of rain. Yesterday (Friday) there was only a trace.

Many of the milo plots and a few of the kafir plots are beginning to head. Most of these are on fallow, or on wheat ground, which the last few years has been about the same as fallow. The wide-spaced milo plots are holding up fairly well. Soil samples were taken on the M.F. milo L and M plots, M.C. milo A and B plots, the different spaced milo plots, and the evaporation plots. All the Sudan grass which was put on wheat plots that were not scheduled to be worked until next spring is a failure, except one plot. This plot and the two surface planted plots were mowed.

Maximum temperature, 106°; minimum, 66°; precipitation, trace.

TUCUMCARI:

Showers totaling 0.40 inch the past two days temporarily freshened crops, which have been rolling and firing extensively the past week. The relief will be only for a day or two unless more rain falls. Corn apparently is past saving, only a light fodder crop being possible. Nearly all milo with the exception of the very late dates is certain to make no more than very light yields, and kafir yields will depend largely on rainfall within the next two weeks. Cowpeas have stopped growth, but since the leaves are not turning, this crop is being left unharvested in hopes immediate rain will enable plants to resume growth.

Maximum temperature, 104°; minimum, 60°.

DALHART:

The heat wave which hung on during the previous week was broken by 90° temperatures this week. Two showers the latter part of the week were inconsequential in amount. Sorghum crops continued to deteriorate. most of them are now past saving for grain production, although some could be revived for feed if moisture would come soon. Broomcorn stalk which had almost completely dried, were harvested during the week. Corn on all except fallow and listed plots was likewise harvested. Many sorghum plants are drying almost completely without the leaves first burning. Work during the week has consisted of bagging marginal heads, rebuilding scales, work on the well, picking grapes, soil moisture sampling, and making studies with blue grama seedlings. This latter study is undertaken with the purpose in mind of learning conditions under which the seedlings survive. Apparently some interesting observations will be possible with the data that are being accumulated. Pastures are dry, yet to this date we have (in certain locations) a

considerable number of blue grama seedlings alive; and this in spite of the fact that it has been six weeks since a rain, the surface soil is dry, and temperatures for August have been above normal.

Maximum temperature, 102°; minimum, 59°; precipitation, 0.19 inch.

BIG SPRING:

Maximum temperatures have not reached the high points of the previous two weeks, but otherwise climatic conditions throughout this area have changed but little. In fact it has just been another hot, dry week, which has further reduced the crop prospects for this section. The first bale of cotton produced in Howard county this year was ginned August 18. This is the first of what looks like a very short cotton crop for this section.

Cowpea hay from an increase field and from the rotations was stored in the barn during the week. Although yields were not large, a fine quality of hay was obtained. Some of the early maturing grain sorghums from the May 15 date of planting were harvested. Other work has consisted of roguing milo and bagging sorghum heads for seed.

Maximum temperature, 98°; minimum, 68°; precipitation, none.

LAWTON: (Report for the two weeks period ending August 23, 1936.)

Heat and drought continue unabated. During the 42-day period, July 13 to August 23, inclusive, there were 4 days when the maximum temperature was less than 100°. The average maximum temperature for the period was 103.8°. Rainfall during the 79-day period, June 7 to August 23 amounted to 0.71 inch. The total precipitation January 1 to date amounts to 9.67 inches.

Cotton bolls have been cracking open since about August 10, and the first bales of the season have been brought to the gins in surrounding localities. The fiber is very weak, and much of the station planting seems hardly worth picking. The bolls are very small and poorly developed. The number of bolls per plant varies from 0 to 2 or 3. In the variety test and in some of the spacing tests, production will be slightly better.

Harvesting of the sorghums in the Chinch bug Sorghum Resistance project has been completed with the exception of a few plots of late maturity. Some very good grain yields were produced on a lot of advanced hybrids.

Farm operations have been at a standstill for many weeks. Hauling water for livestock and for domestic consumption is the daily task for the majority of farmers and large numbers are being placed on relief projects of various kinds.

WOODWARD:

It has been cloudy for the past 2 days, which is some relief to a practically unbroken drought of 78 days. In sorghum fields one sees many plants that have finally given up, fallen over, and died. But as a rule stands are still sufficient. The drought has been so severe that in most cases sorghums have made no attempt to head, but have developed great root masses. Should rains come, it is probable that there would be much branching and suckering and that they would make very rapid growth. It is even possible they might make considerable grain.

For fall feed some farmers will still plant Sudan grass or sowed sorghum feed, though little can be expected from it unless rains are plentiful and frost comes late. Oats will also be planted for fall pasture. Much wheat will be planted early for pasture. All this, of

course, if rains come.

A trip of a hundred miles the last of the week showed the country about Woodward fairly bristling with dead trees. Over the oak covered hills a hundred miles east of Woodward the leaves are brown and many trees will probably not put out leaves the coming spring. On the station grounds at Woodward many species of shrubs and trees are showing acute distress, no matter how much water is applied.

Taking soil samples, cleaning fence rows, mowing lawns, picking grapes, watering trees, and general repairing of machinery comprised the bulk of station work during the week.

Maximum temperature, 108°; minimum, 73°; precipitation, none.

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# WEEKLY STATION REPORTS

OF THE DIVISION OF

## DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

AUG 29 1936

Not for publication without
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REPORT FOR THE WEEK ENDING AUGUST 29, 1936.

HAVRE:

Showery weather prevailing earlier in the week increased the total precipitation in August to 1.45 inches, or slightly more than the average, this being the first month since February to receive normal rainfall. Top soil moisture improved to some extent, and certain fallowed areas previously in an extremely cloddy condition were worked down for fall grains to be sown later. The harvest of a light crop of corn fodder is now in progress, rains coming too late to be of material benefit.

With respect to the livestock project, measurements of the range pastures were completed; the bulls were removed from the feeding herds and trucked to the station; and mid-season weights of the cattle were obtained. The water situation on the Bear Paw lease has improved slightly following recent showers.

Maximum temperature, 90°; minimum, 43°; precipitation, 0.66 inch.

HUNTLEY:

The week was moderately cool with several cloudy days and threatened showers. No precipitation was received at the station, although drenching rains and a hail storm were reported in localities less than 10 miles away.

Grasshoppers have died off rapidly during the last two weeks, until at present very few are to be found. These insects did considerable damage to alfalfa seed plots through the destruction of the blossoms and cutting off the young seed pods. Since the grasshopper numbers have decreased much of the late bloom is now setting seed, and with favorable climatic conditions from now on, it is possible a light seed crop may be harvested.

Field work has consisted of completing the hand-harvesting of corn and beginning fall plowing and the preparation of seed beds for winter grains.

Maximum temperature, 91°; minimum, 41°; precipitation, trace.

SHERIDAN:

Although there were some fairly warm days, the weather over the week as a whole was cooler than it has been at any time since the first part of June. The remainder of the sorgo and Sudan grass was harvested and the fields cleared for use as pasture for the sheep. With the exception of 1 plot to be cultivated just before seeding, all land was prepared for seeding of fall grain, and a part of the rotation fall plowing was completed. With no rain to pack the soil since it was last worked, the ground did not dry as hard as usual, and the disk plow does a much better job of plowing than usual when the soil is dry.

Maximum temperature, 96°; minimum, 39°; precipitation, trace.

DICKINSON:

Cool pleasant weather continued all week. Vegetation has freshened up some after five showers amounting to 1.05 inches during the previous week. Native grass is slightly green in the pastures. Crested wheatgrass has greened up noticeably on 1935 plantings and where there was enough moisture in the spring for fair growth. In older

plantings and on drier locations grass has barely started growth. Russian thistle has come on rapidly and will now have enough growth on nearly all fields to hold some snow and provide roughage for stock.

Winter wheat and winter rye seeded on the rotations August 21 have not had quite enough moisture to bring on a good stand. Rye seeded in the orchard on the 20th and followed that night by a shower of 0.27 inch now has a good stand. A furrow drill was used for these seedings and for a small field of rye seeded for pasture.

The rain slightly improved the size and quality of late plums. Tomato plants are now growing rapidly and have set a fair amount of fruit since the cooler weather in August.

A. D. Stoesz, Acting Regional Nurseryman, SCS, Mandan, visited the station today.

Precipitation August 1 - 29 amounted to 1.23 inches, 0.6 inch less than in 1935 and about half an inch less than normal for the month. Total precipitation so far in 1936 amounts to 4.82 inches, and for the past year only 6.12 inches, the lowest amount ever recorded here before in a 12-month period.

Maximum temperature, 92°; minimum, 45°;precipitation, 0.01 inch.

MANDAN:

Agronomy - The past week has been the coolest of the season. There were two or three days that were mostly cloudy, but little rain fell. The maximum temperature was 89° on one day and from 75° to 81° on the other days.

Corn in the rotations was cut and put in the silo. The best yield was from summer fallow. This amounted to 70 pounds for the plot, as it came from the field. The corn varieties made 200 pounds as they came from the field on 1 1/3 acres.

Maximum temperature, 89°; minimum, 47°; precipitation, 0.04 inch.

Cooperative Grazing Experiment - The pastures are practically all used up. Final weights of the steers are being obtained, and the experiment will be closed for the season at the end of this month. The steers in most of the pastures are likely to show a loss or light gains for the month, partly because of feed shortage and partly because of the cool weather.

President Roosevelt, Secretary Wallace, Under Secretary Tugwell, Director Harry Hopkins, WPA, and other Federal and State officials visited the station on Thursday, August 27. H. H. Bennett, Chief of the Soil Conservation Service, visited the station on August 28 and went over the soil conservation nursery. F. L. Duley, of the Soil Conservation Service was a visitor at the station earlier in the week.

BELLE FOURCHE:

Cool weather prevailed most of the week, and the first minimum temperatures below 50° since June 21 were recorded August 27 and 28. The heaviest rain of the season, totaling 0.53 inch, was received August 26 and 27, but it was too light to be of value to crops on dry land to improve soil conditions. Field work included hauling and weighing of corn fodder from rotation plots. The yields of field cured corn fodder ranged from 150 to 650 pounds per acre.

Maximum temperature, 94°; minimum, 46°; precipitation, 0.53 inch.

ARCHER:

During the past week the weather continued dry with a wide spread in temperatures. Low temperatures with cloudy and threatening storm conditions occurred during the latter part of the week. The weather is clear today. Late crops are maturing under dry conditions. Winter wheat and winter rye seeded on fallow last week emerged in 5 days, whereas seedings in corn rows and stubble land have not yet emerged.

Work at the station consisted of spraying the potatoes the third time, harvesting part of the Sudan grass, and threshing. Threshing will be practically finished today.

W.L. Quayle, John J. McElroy, Extension Agronomist of the University of Wyoming, and O. S. Fish, Extension Agronomist, U. S. Dept. Agriculture, visited the station August 25.

Maximum temperature, 95°; minimum, 38°; precipitation, trace.

NORTH PLATTE:

Mostly cool weather was recorded over this area during the week. The days are moderately warm accompanied by very cool nights. No rain has fallen during the week. Moisture is needed to wet up the surface soil to aid in the emergence of the new grass seedings. The fall seedings of alfalfa and sweet clover as well as the bromegrass and grama grass are making excellent growth. Mr. Conard of the Soil Conservation Nurseries is making seedings of grass for increase material.

The filling of the pit silos is completed, and the trench silo will be used for the rest of the silage. The third crop of alfalfa has been cut and stacked. The weed growth on the variety small grain stubble and the cut corn ground has been checked by disking. The corn variety plots on dry land are mostly dried up and will be of little experimental value. A few varieties will mature some corn, so the entire experiment will not be discarded.

Maximum temperature, 102°; minimum, 45°; precipitation, none.

AKRON:

August is nearing a close with but three days with temperatures of 100° or above. This, however, is the second highest number of such August days within the history of the station, there being five in 1934. On Wednesday there was a distinctly hot wind from the south all afternoon, about the longest period of such winds ever experienced at this altitude, 4,500 feet. This brought a maximum of 102° for that day.

Sudan grass seeded with the furrow drill on July 1 on the sorghum variety series was cut in the pre-heading stage August 14. This was hauled in about the middle of the week in air-dry condition. The approximately 5 acres produced 9,485 pounds. The Flynn barley across the railroad which the grasshoppers damaged or grain was mowed and stacked for forage. Proso harvesting has been actively in progress during the week. The yield of this crop promises to be good.

Visitors were J. H. Martin and family, and E. F. Resek of the State College.

COLBY:

The hot, dry weather continued until Thursday evening of this week. Then scattered thunder showers moistened the soil in many places and brought much lower temperatures. Heavy rains was reported in several small areas in the county, but at the station the total was only 0.08 inch. All the sorghums, which are about the only crop still

green, are continuing to wilt and dry up.
Maximum temperature, 106°; minimum, 47°; precipitation, 0.08 inch.

GARDEN CITY:

Thursday evening brought 0.75 inch of rain, which saved August from being the driest on record. The total precipitation for the month so far is 0.88 inch while the normal for this month is 2.39 inches. Since many of the milo and kafir plots are heading out, this moisture will help some in maturing them. The temperature on four days this week was 100° or above.

Soil samples were taken on the MF milo plots L and M, the MC milo A and B, the milo diked plot, and on the evaporation plots. The weeds over the project were hoed.

E. W. Johnson, Woodward, was a visitor at the station.
Maximum temperature, 108°; minimum, 54°; precipitation, 0.75 inch.

TUCUMCARI:

Parched and fired crops were given new lease of life by a slow rain of 1.45 inches the night of August 27, followed by 0.15 inch last night. The early milo, broomcorn, and cowpeas, and practically all corn plots were too far developed or too badly injured to be revived to any extent. Kafirs and forage sorghums, as well as all late planted crops, will be materially helped. The first five days of the week were hot and clear, with sudden drop in temperature the past two. Prior to the recent rains, August had been the hottest, driest, and highest in evaporation of any August on record.

Conditions for seeding wheat are now ideal, but over much of this territory the yield of sorghums, both grain and fodder, will be very light.

DALHART:

The continued dry weather has eliminated what meager chances there were for producing any sorghum grain. Most of the plants remain alive, but the quality of the forage will be poor now except for late plantings. Some of the earlier dates of planting were harvested during the week. No heads were produced on any of them. The soybeans in the nurseries have started to shed their leaves, and a large number of varieties were harvested for hay. August has been much drier than usual - in fact it is the driest August on record so far. Many weedy sorghum fields will in all probability not even be harvested for feed. Such fields will likely be pastured on account of a shortage of feed.
Maximum temperature, 100°; minimum, 58°; precipitation, 0.06 inch.

WOODWARD:

The maximum temperature was only 81° on August 28, and today it may be even less. These lower maximums are a great relief after so long a spell of hot weather. On the 28th a drizzling rain started in and lasted most of the day, but totaled only 0.17 inch - enough to start many weeds.

While perhaps a larger percentage of land was prepared early for wheat than in several years, many farmers are skeptical of working land which has not had rain enough to settle it since it was prepared for wheat a year ago. There has not been rain enough to start many weeds, and these, mostly Russian thistles, have been grazed close by

livestock. So all the preparation much land will receive is a light disking to destroy volunteer wheat and late germinating weeds.

Very few sorghums have made any attempt to head, and there is now practically no hope for a crop of grain from the sorghums, though it is not too late for a fair amount of feed from them. Wheat and oats will be planted as early as possible to afford fall pasture.

Station work for the week consisted of repairing plot roads, hauling sand, taking soil samples, and watering trees and ornamentals. Some cotton was picked on the 26th.

Maximum temperature, 107°; minimum, 59°; precipitation, 0.17 inch.

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